gave of the *Challenger* observations in the *Athenæum* of May 16.

As I have never claimed any originality in regard to the doctrine of oceanic circulation, which I have advocated solely as an important scientific truth, it has afforded me nothing but the most unalloyed satisfaction to find that the doctrine which appeared to me, as to Sir John Herschel (when I brought the case fully before him), the "common sense of the matter," was put forward nearly thirty years ago by one of the most eminent physicists of his day, as a necessary deduction from the facts of observation. That Lenz's Doctrine of Oceanic Circulation (for so it should now be termed) did not then obtain the general acceptance which I now confidently anticipate for it, seems principally due to the little attention formerly paid to Ocean Physics; it being only in recent years that the relation of deep-sea temperatures to the distribution of animal life on the ocean bottom, and the consequent importance of this knowledge in geological research, has made the inquiry one of general interest. This is the point of view in which the study of the subject has been pursued by Mr. Prestwich, whose exhaustive memoir will constitute a most valuable preface to the full discussion of the *Challenger* observations, when these shall have been brought to a conclusion two or three years hence.

"The mass of water in the tropics," says Lenz, "warmed down to a certain depth by the sun's heat, cannot maintain its equilibrium with the colder water of the middle and higher latitudes; a flow of the warmer water from the equator to the poles must necessarily take place on the surface, and this surface-flow must be supplied at the equator by a flow of colder water from high latitudes, which would at first flow in an almost horizontal direction, but which under the equator must rise from below to the surface. In this manner, in the northern hemisphere, a great vertical circulation takes place in the ocean, which has its direction above from the equator to the pole, and below from the pole to the equator. Since these flows, moving in opposite directions, are distinguished by their different temperatures, we observe in the submarine isotherm an indication of the lower portion of this flow. A corresponding flow, but moving in the opposite direction, takes place in the southern hemisphere; so that *in a zone surrounding the equator, where the two flows meet, the water flows almost in the direction from below up to the surface.*"

Lenz further adduced the low salinity of the surface-water of the equatorial belt, compared with the high salinity of tropical water, as an additional indication of the continual ascent of polar water from the bottom. And after remarking that water moving in the north and south direction must have its course influenced by the rotation of the earth, he continues, "It is a point which has been determined by Humboldt, John Davy, and others, that the water of the ocean is colder at the surface over shallows, than at some distance beneath over very great depths. This phenomenon, the explanation of which hitherto has not been found to be satisfactory, is a simple consequence of the movement of deep cold water from the pole to the equator. For if this runs against any obstruction, such as a shallow would present, it will rise along it, as upon an inclined plane, and approach nearer the surface, which in this manner will be cooled down." Thus Lenz explicitly propounded the principle on which I have explained the "cold band" between the Gulf Stream and the United States sea-board, the similar cold band on the east coast of Japan, and the cold stratum on the east side of the Dogger Bank. And I venture to believe, therefore, that here, too, the "common sense of the matter" has led me to a right conclusion.

I learn also, from Mr. Prestwich's memoir, that Arago, in 1838, in his instructions for a scientific expedition to Africa, not only distinctly recognised the existence of an underflow of glacial water from the poles towards the equator as the cause of the reduction of oceanic temperature with depth, and explicitly repudiated the doctrine of the uniform deep-sea temperature of 39½°; but also remarked upon the comparatively high temperature of the deeper stratum of the Mediterranean (first ascertained by D'Urville) as indicating that the polar flow does not find its way into that basin through the Strait of Gibraltar; thus anticipating the argument which I have based on my own investigations into the comparative thermal conditions of the Atlantic and the Mediterranean, as to the existence of a polar underflow in the former.

WILLIAM B. CARPENTER

NOTES

WE greatly regret to announce that Prof. Ångström died on the 21st ult.

MR. JOSEPH PRESTWICH, F.R.S., F.G.S., has been appointed to the office of Professor of Geology in the University of Oxford, as successor to the late Prof. Phillips.

THE Chair of Human Physiology in University College, London, in future to be called the Jodrell Professorship, after the name of its endower, has been filled by the appointment of Dr. J. Burdon Sanderson, F.R.S., who is now Professor of Physiology, including Practical Physiology and Histology. We have reason to believe that Mr. E. A. Schäfer will be appointed Assistant Professor under Dr. Sanderson.

M. A. DE CANDOLLE has been elected a Foreign Associate of the French Academy in the place of the late Prof. Agassiz.

THE death, at the early age of 28, is announced of Mr. Charles Tyrwhitt Drake, one of the officers in charge of the survey of Palestine. He succumbed to a second attack of malarious fever.

ENTOMOLOGISTS generally, and Coleopterists in particular, have experienced a great loss in the death of Mr. George Robert Crotch, M.A., of St. John's College, Cambridge. Mr. Crotch graduated in 1863, obtaining honours in the Natural Science Tripos. Until 1872 he was one of the Under Librarians at the University Library, when, besides his excellent work in that Institution, he devoted his spare time to his favourite subject. Mr. Crotch sailed for America in 1872, *en route* for Australia, for the purpose of studying the entomology of parts which he considered incompletely known, and on several occasions he has transmitted collections to England. He had added considerably to our knowledge of the entomology of California, Vancouver's Island, Oregon, and other districts; and on two occasions the Senate of Cambridge, recognising the importance of his work, voted him a sum of money from the University chest to aid him in sending collections to the University Museum.

TWO scientific expeditions are to set out from Archangel next summer—one into Russian Lapland, for the purpose of exploring the traces of ancient glaciers; the other, to the shores of the White Sea, has for its object zoological investigations. Dr. Yarjinsky, *La Revue Scientifique* states, who explored the district two years ago, discovered in the White Sea and the glacial ocean fishes and crustaceans till then quite unknown.

MR. JAMES LICK, of San Francisco, California, having in the course of his life accumulated a large fortune, has recently concluded a deed by which he conveys all his property to seven persons upon trust to be applied to various worthy objects. Among these, 700,000 dols. are to be applied to the construction of a more powerful telescope than any yet made, to be erected at an observatory in California, and 300,000 dols. to found, in California, a school of the mechanical arts.

THE last but one of the Government expeditions for observing the transit of Venus sailed from Plymouth for Christchurch, New Zealand, in the clipper ship *Merope*, on Saturday. The party consists of Major H. S. Palmer, R.E., chief astronomer in charge; Lieut. L. Darwin, R.E., assistant-astronomer and photographer; Lieut. H. Crawford, R.N., assistant-astronomer, and three non-commissioned officers of the Royal Engineers trained in the use of the photoheliograph.

A CORRESPONDENT writes that he has tried, with almost complete success, Prof. Helmholtz's remedy for Hay Fever, referred to in the paper (NATURE, vol. x. p. 26) sent us by Prof. Tyndall. Our correspondent gives the details of his treatment in a letter to the *Manchester Examiner* of the 30th ult., which also contains a letter from another sufferer who has tried Helmholtz's remedy with success. Our correspondent also asks,—"Could any of your readers give any information as to Weber's nose douche?—a more effective method of administering the remedy than by means of the pipette is desirable."

MR. SAVILLE KENT, Curator of the Manchester Aquarium, seems resolved to do his best to make that institution subserve the purposes of scientific instruction. Last Friday he gave the first of a series of lectures on subjects connected with aquaria to a fairly numerous audience; it is intended, we believe to continue the lectures on Friday afternoons during the summer.

DR. JOHN KIRK has received a letter from Lieut. Cameron dated Ujiji, Feb. 25, reporting his safe arrival at that place; he was just about to start for Unyanyembe. He heard from the people of Ujiji that the Lualaba from Nyangwé goes into the Mwootawzige or Bahari Unyoro, "so that," he says, "it must be the Nile after all."

MR. FORSYTH, the leader of the Yarkund Mission, arrived at Leh on the 17th. ult. He is expected in Calcutta about the 15th inst. Dr. Stoliczka is reported to have died on the 19th ult. at Shyok, above the Saser Pass.

THE prospectus is issued of a series of Positivist publications, *La Bibliothèque Positiviste*, to be written by M. Andrè Poëy, having for its object the popularisation of the positive philosophy. The prospectus is mainly an eloquent eulogy of the Positivist doctrines, and an attempt to show that since Comte began to write they have gradually penetrated everywhere. The *Bibliothèque Positiviste* will consist of 30 monographs, to be published at intervals, in which the principles of Positivism will be expounded in relation to every sphere of human thought and action. The first part is entitled "La Bibliographie Positiviste," and will contain a list of 750 publications in favour of or opposed to Positivism, all of which have been published since Comte began to write. The publisher is Ernest Leroux of Paris.

THE Turners' Company, unlike most of the antiquated City guilds, seems to be alive to the fact that there are other kinds of merit worthy of honour besides the distinguished one of being a prince of the blood, a foreign potentate, a conquering hero, or one of her Majesty's ministers. It requires distinction of a very blazing kind indeed to attract the attention of most of our obtuse City Companies. The above Company is, however, a creditable exception in this respect to most of the others. Shortly before his death it conferred its freedom upon the late Prof. Phillips, and last week it did itself the honour of marking in a similar way its appreciation of the work which has been done by Sir Charles Lyell, Bart., F.R.S. The Turners' Company is evidently awake to the fact that after all the Useful Arts, Manufacture, and Commerce may derive some benefit from the results of non-utilitarian scientific research. The arts represented by the Turners' Company use, as part of their material, various sorts of stones, and Mr. Jones, the Master, showed in his really eloquent and well-informed address last week, that these arts have been greatly indebted to Sir Charles Lyell for having done much in their behalf by spreading a knowledge of the materials with which they work. Sir Charles, in his reply, spoke of the storm of opposition raised against many of the geological doctrines propounded in his first work, half a century ago, as compared with their almost universal acceptance at the present day.

WE have received a copy of a very able address delivered by Dr. Julius Haast, F.R.S., before the Philosophical Institute of Canterbury, New Zealand, in which he comments on several points connected with the geology of that country, maintaining his own theory as to the glacial origin of the Canterbury Plains in opposition to that of their marine formation, as supported by Capt. Hutton. In speaking of the extinct Struthious birds whose remains are so abundant, he is disposed to divide them, contrary to Prof. Owen, into two main families: the Dinornithidæ with a long metatarsus, no hallux, and a bony scapulo-coracoid bone; and the Palapterygidæ with a short metatarsus, with a fully-developed hallux, and no ossified scapulo-coracoid bone; the last-named character being one of particular interest, and supported by several arguments, the strongest of which depends on the absence of any coracoid articular grooves on the anterior margin of the sternum.

A RATHER strong shock of earthquake was felt at Constantinople on Friday, lasting two seconds. No accident is reported.

THE French Government has recently voted the sum necessary for the formation of a great inland sea in Algeria, 190 miles long by 36 broad, to the south of Biskra. A chain of chotts (*Chott* implying the bed of a lagoon) considerably below the level of the Mediterranean, is to be utilised for the purpose. A full account of the project is given in the first June number of the *Revue des Deux Mondes*.

THE meeting which was to have been held this month in London in connection with the Edinburgh University Buildings Extension Fund, has been postponed until November next.

MR. SANDERSON, from Lancing College, has been elected to a Natural Science Scholarship in Worcester College, Oxford. Messrs. Hugh Brocas-Price, from University College, London, and Mr. Henry H. Robinson, from Magdalen College School, have been elected to Natural Science Demyships in Magdalen College.

MR. W. J. NOBLE, of Epsom College, has been elected to a Natural Science Scholarship in Keble College, Oxford.

A MEANS of preventing the spread of the vine-pest, the *Phylloxera vastatrix*, is said to have been found, in the spreading of a layer of fine sand on the ground round the stems of the plants. The sand is said to be too loose for this insect to pass through, and the consequence is that it is intercepted in its passage from one plant to another. We are sorry to hear a report that this plague has found its way into Australia. The vine-growing districts of our Australian colonies are becoming so important that we trust this report may be unfounded. At all event steps should be taken to prevent its introduction into any of our colonies: such a measure will be easier than its destruction, should it ever gain a footing in them.

IN view of the scarcity and high price of oysters in this country it is alarming to hear that the celebrated beds of Arcachon, Concarneau, and other places in the west of France, are thought to be less productive than formerly. The want of accurate knowledge concerning this bivalve is probably at the root of this scarcity, and it may also be possible that the changes which are constantly taking place in the position and even in the nature of the sea-coast, may have a serious effect on the productiveness of

the oyster beds all over the world. It is a well-known fact that oysters will not grow in certain localities where the conditions are apparently exactly similar to other localities where they will thrive; and the gradual change wrought by the sea in certain parts of the coast may account, quite as much as overfishing, for the gradual extinction of oysters. All beds are, however, fished much more extensively now than they were a few years ago, and whenever one is discovered, it is quickly worked out, without any consideration being given to the question of its extent, and whether it is a newly-established bed or not. America now largely supplies us with oysters either in a fresh state or preserved in tins, and it is calculated that in Maryland State alone, 5,282 persons are employed in dredging, and 10,947,803 bushels of oysters were taken in 1870-71; while the waters of Virginia are said to be equally productive. In the great oyster markets of Baltimore, where immense quantities of oysters are tinned, over 10,000 hands are employed in this branch of the trade.

A VALUABLE contribution to zoology is furnished by a paper published by Mr. Dall, on the birds of the Aleutian Islands, especially of that portion of the region to the west of Oonalaska, embracing the result of observations made during 1873 on board the U.S. Coast Survey vessel, the *Yukon*. As might have been expected, the great majority of the species are water-birds, particularly *alcadæ*, upon the natural history of which Mr. Dall throws much light, having been the first to collect eggs of several of the species, and observe their habits during the breeding season. The land-birds on this island are very few in number, consisting of two kinds of hawks, one owl, a swallow, and a wren, five finches, the raven, and ptarmigan. The total number of species enumerated is forty-five.

WE have received the prospectus of a work entitled "The Dominion of Canada; comprehending a General Description of the Confederated Provinces of British North America, and the North-west Territories," by Henry Youle Hind, M.A. (Montreal: John Lovell.) The following are the leading subjects:—I. Physical Geography of the Dominion. II. Climate and Climatic Effects. III. Geological Features. IV. Travel and Transportation. V. Agricultural, Forest and Mining Industries. VI. Commerce, Manufactures, and Fisheries. VII. The Inhabitants. VIII. Government. IX. Social Status. X. Miscellanea. The illustrations will consist of upwards of 250 engravings on steel, chromoxylographs, woodcuts, &c.

AT present the principal source of income to the United States from its acquisition of Alaska, and that which pays the larger part of the interest on the original investment of 7,000,000 dols. in its purchase, is derived from the fur-seal islands of St. Paul and St. George, which constitute the Pribylov group, in the Behring Sea. It is from these islands that the greater number of the skins of the fur seal as known in commerce are derived, the animals resorting to them in immense numbers every spring for the purpose of bringing forth their young. In 1870, an Act was passed by Congress limiting the number to be killed at 100,000. The Alaska Commercial Company secured the lease of the fishery, and has carried out the contract in apparent good faith. The condition of the islanders has been considerably improved. Congress has authorised the appointment of a commission to investigate the natural history and geographical distribution of the fur seal.

FROM the *Monthly Notices* of the Royal Society of Tasmania for June, July, and August, 1873, we learn that the Society has been making an inquiry in reference to the stone implements of the Tasmanian aborigines, especially as to whether the natives made use of these implements fastened to handles, after the manner of axes or tomahawks. All inquiries on the subject tend to prove that no true tomahawks were known to or fabricated by the natives; they merely used sharp-edged stones as knives. These were made sharp, not by grinding or polishing, but by striking off flakes with another stone till the required edge was obtained. As a very general, if not invariable, rule, one surface only was chipped in the process of sharpening. They were made from two different kinds of stone—the one apparently an indurated clay rock, the other containing a large proportion of silex.

A WRITER in the *Times* complaining of the want of labels in the Bird Gallery of the British Museum, states that "A young and active Naturalist has been appointed specially to look after this part of the collections." It is hoped that he will see that all the specimens are furnished with labels.

SOME experiments of particular interest physiologically have been undertaken by Dr. Worm Müller, and are described by him in Ludwig's *Arbeiten* (vol. viii. p. 159), an abstract of which paper will be found in the *London Medical Record* for last week. The author finds that the transfusion into the circulatory system of an amount of blood three times as much as that normally contained in the system does not cause any rise in the arterial blood pressure, though the pulse-rate is reduced. The reduction of the quantity of blood after transfusion, however, causes a rapid fall in the blood-pressure, even when only half that added has been removed. We think that the former of these results is not difficult to explain, for the heart, being an engine with only a limited capacity for work, it can only maintain a certain determinable blood-pressure, depending on the bulk of its muscular parietes. The introduction of an excess of blood to be circulated can therefore act only in filling the system at the expense of the velocity of the current, with a diminution in the rapidity of the cardiac action.

IT may be of some interest with reference to the demand of ladies to be admitted to the ordinary degrees of the University of London, to note that at the recent distribution of prizes at University College the first and second places in the mixed class of Jurisprudence were both occupied by ladies, Miss E. Orme, who two years ago took the prize in the class of Political Economy, coming out first, while in the mixed class of Political Economy a lady this year took the fourth certificate.

DR. W. G. FARLOW has published in the *American Journal of Science and Arts* an account of some investigations carried on in the botanical laboratory of the University of Strasburg, illustrating a remarkable asexual development from the prothallus of *Pteris serulata*. In the centre of the cushion or thickest part of the prothallus were a number of scalariform ducts, the prothallus bearing a number of antheridia, but no archegonia. From these ducts a leaf is developed directly, after which a root is also developed, and last of all a stem-bud. A comparison was drawn between this growth, which was observed in this species only, and the buds produced in the ordinary way from the protonema of a moss. Normally the prothallus of a fern is entirely destitute of vascular tissue of any kind.

DR. McKendrick (*Brit. Med. Journ.*, June 27, 1874) has made a contribution to the subject of the physiological antagonism of medicines which has been so elaborately illustrated by the works of Fraser and Crum Brown. He finds that while Bromal causes an excessively copious secretion of saliva, Atropine quickly arrests it, in rabbits. Possible practical applications of this discovery in the treatment of various kinds of ptyalism in man are at once thought of, and already cases of so-called success in the salivation of pregnancy are recorded.

IN the Bulletin of the Buffalo Soc. Nat. Sci. No. 4, vol. i., will be found a paper by Prof. Hartt on the geology of the Lower Amazons. He determines, on palæontological evidence, that the great plain of the Serra of Ereré is of Devonian age.

AMONG recent additions to the Manchester Aquarium are the following:—1 Smooth Hound or Skate-Toothed Shark (*Mustelus vulgaris*); 2 Topers or White Hound (*Galeus canis*); 2 Picked Dog-fish (*Acanthias vulgaris*); 4 Lesser Spotted Dog-fish (*Syllium canicula*); 4 Greenland Bullheads (*Cottus grænlandicus*); 3 Gemmeous Dragonets (*Callionymus lyra*); 5 Cat or Wolf-fish (*Anarhicus lupus*); 2 Tadpole Fish (*Raniceps trifurcus*); Zoophytes—*Actinoloba dianthus*, *Sagartia bellis*, *S. nivea*, *S. viduata*, *S. miniate*, *Tealia crassicornis*.

THE additions to the Zoological Society's Gardens during the past week include a Black-backed Jackal (*Canis mesomelas*) from South Africa, presented by Captain Webster; two Rhesus Monkeys (*Macacus erythræus*) from India, presented by Mr. W. Dunn; a Chinese Turtle Dove (*Turtur chinensis*), from India, presented by Major F. Gildea; a Canadian Beaver (*Castor canadensis*) and a Virginian Deer (*Cervus virginianus*), born in the Gardens; a Lanner Falcon (*Falco lanarius*), from east Europe, purchased.

SCIENTIFIC SERIALS

Transactions of the Norfolk and Norwich Naturalists' Society, 1873-74 (Norwich: Fletcher & Son).—This Society is now in the fifth year of its existence, and is in a satisfactory condition as to members. The chief features of the present number of its "Transactions" are Parts IV. and V. of the "Fauna and Flora of Norfolk," which the Society has undertaken to publish. Part IV., by Dr. John Lowe, embraces a list of the fishes known to occur in the Norfolk waters; and Part V. (forming a separate supplement), the Norfolk Lepidoptera, by Mr. C. G. Barrett. Both lists appear to have been done with great care and caution, and we should think that Dr. Lowe and Mr. Barrett have left very little to be added. The catalogues reflect the greatest credit both upon the compilers and on the Society, a few of the wealthier members of which have contributed the greater part of the expense of printing the present supplement. The next instalment of this important work of the Norfolk Society will contain the flowering plants, by Mr. H. D. Geldart. The president's address gives a *résumé* of the year's work of the Society, and discusses the question of Biogenesis.—Mr. F. D. Wheeler contributes a paper On breeding Lepidoptera in confinement, giving the results of the author's own experience; and Mr. F. Kitton one On Empusca and other micro-fungi.—In a short paper by Mr. J. B. Bridgman On the nidification of the Prosopis, the author concludes that this bee forms its "nest in any suitable situation, whether in soft earth or wood, not even despising ready-formed holes, and that it collects and carries home pollen in its mouth, after working it up in a pellet."—Mr. John Quinton contributes notes On the meteorological observations recorded at Norwich during the years 1870 73.—A variety of interesting miscellaneous natural history notes conclude the number. Altogether this Society must be congratulated on its year's work; its first object is "the practical study of natural science," which it seems to be carrying out with considerable faithfulness.

Proceedings of the Bath Natural History and Antiquarian Field Club, vol. iii. No. 1. 1874. This Society, to judge from this number of its "Proceedings," seems to devote itself mainly to antiquarian research, "Natural History," though it comes first in its title, seeming to find but small favour among the members. This defect the secretary animadverts strongly upon in his "Summary of Proceedings," stating, moreover, that the club was originally started for the purpose of botanical research. We do not undervalue antiquarian research, but we think it a pity that a club containing so many intelligent and well-educated members should fritter away almost its entire time and strength in a department that could be very satisfactorily worked by a small proportion of its members, to the almost entire neglect of the rich field presented by the district around Bath for Natural History investigation. We hope that the next number of its Proceedings will show that the suggestions of the secretary have been adopted. The only two natural history papers in this number are by Mr. C. E. Broome, F.L.S., On some of the fungi found in the Bath district, the present paper including Order 10, Myxogasters, and a short note by the Rev. Leonard Blomefield, F.L.S., On the occurrence of the Land Planaria (*Planaria terrestris*) in the neighbourhood of Bath. Dr. Bird was the first to discover this animal (supposed to be the only species of Land Planaria in western Europe) in the Bath district, and Mr. Blomefield is inclined to believe it to be carnivorous, making a prey of the smaller land molluscs. The secretary gives an extremely interesting summary of the meetings and excursions of the Society during 1873-74.

Zeitschrift der Oesterreichischen Gesellschaft für Meteorologie, June 1.—The observations of M. Marié Davy on the diminution of certain river waters in France are here closed with a discussion on the influence of different kinds of vegetation growing in their basins. It is shown that waste open land evaporates the least amount of rain-water, and forests less than corn or other farm produce. The increase of high farming and artificial meadow-land, absorbing and evaporating much moisture, must diminish the size of streams by robbing them of part of their supply, and to keep up the summer flow of a river it might be thought desirable to plant its upper basin with forests. Comparison of different rivers shows, however, that no valuable addition would thus be gained. Whatever be the origin of the river, geological conditions are alone effective. Therefore, although as a measure of national economy, for fixing soil on slopes, mitigating floods and changes of level, and providing cheap fuel, the maintenance of forests would be beneficial, we must look forward to a time when the art of storing some of the excess of winter rainfall to supply the needs of summer will be adopted in agriculture.—Among the "Kleinere Mittheilungen," Prof. Prestel deduces from twenty years' measurement of ozone a result similar to that of Herr Karlinski at Krakau, showing a minimum in November or December and a maximum in the spring.—The work of Herr Edlund on the mean temperature of Sweden, and a delicate form of Goldschmidt's aneroid, are here noticed.

Schriften der Naturforschenden Gesellschaft in Danzig, 1873.—The history of the population in the eastern provinces of Prussia is still involved in much obscurity, while that of the remaining provinces is pretty accurately known. In one of the papers in this volume Dr. Marshall considers the evidence obtainable from early writers—Pliny, Tacitus, &c.—from names of persons and places, and more especially from the archæological collections, of which there are two, imperfectly arranged, in Königsberg. From a study of grave-relics, Dr. Marshall is led to the conclusion that, at one time, in these eastern provinces two distinct races lived together. Several races having come from the east and settled in the coast-lands of the Baltic, more than 1,000 years B.C., this land was, later, overrun by Goths from central Russia, many of whom pressed on to Scandinavia and the Danish Islands, and to western and southern Europe; but a number remained on the amber coast, especially in the Weichsel region, and became fused with the Aestian or Wend race, already there; they were together known as *Pruzzen*.—Among the papers is another giving an account of a chemical analysis (made by direction of Dr. Friederici) of certain empty grave-urns of the ancient Prussians, the significance of which has not been clearly ascertained. Dr. Friederici thinks they were in themselves sacred vessels; they are made not from clay, but from ashes, firmed probably with blood of animals killed in sacrifice. In heating, the blood and the carbon particles at the surface had been turned to ashes, presenting a reddish-yellow appearance, while the internal substance was merely carbonised, and darker in colour.—Dr. Lissauer gives an account (with excellent photographs) of some more of those curious face-urns that have been found in large numbers in certain parts of Pomerania; and M. Kasioki describes a number of antiquities of various kinds discovered in Pomerania during 1872.—Dr. Lebert, who has been experimenting on the fluorescence of some specimens of Sicilian amber, finds the phenomenon in these much more marked and frequent than in Prussian amber; in the case of the latter he has observed, with strong sunlight, not only the existence, but the manifold character of the cone of light.—A valuable paper on new and extended employment of the level for astronomical and geodetic measurements is contributed by M. Kayser, and M. Menge continues a list and description of Prussian spiders.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, June 18.—On the Forces caused by Evaporation from and Condensation at a Surface, by Prof. Osborne Reynolds, of Owens College, Manchester.